Engineering Procedure
Signalling and Control Systems

PR S 41416

Log Book Procedures

Version 1.0

Date in Force: 7 September 2015

Procedure

Transport Sydney Trains

NSW GOVERNMENT

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Document control

Version	Date	Author/ Prin. Eng.	Summary of change
1.0	7 September 2015	Mark Albrecht	First issue as a Sydney Trains document Previously TMGA 1416

Summary of changes from previous version

Summary of change	Section

Document history (previously TMGA 1416)

Version	Date	Summary of change
1.0	10/09/2007	New Procedure
1.1	October 2010	Formatted to TMG 400

Table of Contents

1 Purpose

Signal Engineering Standard PR S 41415 "Reassessment of Signalling Infrastructure Workers" sets out the requirements leading to the issue of "Statements of Competency" for qualified signalling staff.

In relation to these requirements, the purpose of this log book is to provide a record of both supervised and unsupervised work undertaken during a specified period. The information contained in the log book serves to provide a formal process to assist the Controlling Signal Engineer evaluate the competency level to which an accredited person may perform the stated signalling function. The log book will record various task elements and highlight experience in areas of signalling infrastructure including Maintenance, Safeworking, Renewals & Construction as well as Signalling Standards Management Systems and Documentation.

It will be used to assess experience on reissue of the 3 yearly “Statement of Competency” and further, any training/experience needs leading to changes to licensing at various levels to perform work on signalling infrastructure.

2 The Log Book

The expectation will be that experience in a broad cross section of signalling systems and equipment will be attained prior to any licence interview or reaccreditation.

The log book is used to record actual work undertaken over a specific period of time, usually every quarter or per project (if project work is less than 6 months).

Pre-formatted log sheets for the various signalling elements are included as an appendix to this document and list the typical signalling activities necessary to support log book entries. Persons are to tick the check box aligned to the activity as applicable or cross the check box if the task was not performed during the applicable period. Details of work undertaken for the specific activity can be further commented in the space provided. The certifying officer will attest to the experience gained.

The record includes the type of signalling apparatus worked on and the particular system of interlocking and control in which the experience was gained. In addition a record of inspection, testing, certification and other signalling safeworking functions are specifically nominated in the relevant pre-formatted sheets contained within the document.

3 Contents of the Log Book

Log book entries should be kept in an appropriate folder and divided into sections for each calendar year. Each section further sub-divided to easily identify the elements of signalling, i.e.: Maintenance, Safeworking and Renewals & Construction. These records form the basis of assessment for licensing by the Controlling Signal Engineer.

Any other appropriate documentation maybe inserted into the Log Book folder. Such documentation should substantiate the individual's experience within the Signal Discipline.

4 Using the Log Book

Pre-formatted log sheets are completed by the individual and attested by a certifying officer.

A certifying officer is typically the Work Group Leader, Team Manager or Signal Engineer responsible for the activity. Provision for independent sign-off is offered adjacent to each activity listing, enabling independence whilst working at different worksites.

The sheets are to be collated and contained within the log book folder as previously described.

Signal Electricians performing routine maintenance on signalling apparatus are to complete the Maintenance Log Sheet. Comments should include the service schedule maintenance level and any other information as applicable.

Signal Electricians performing renewal or construction signalling works are to complete the Renewals & Construction Log Sheet. The specific project or activity is to be shown on the space provided. Comments should include the type of equipment worked on and the level of involvement in each activity, ie: assist in bell testing or conduct wire/null count, etc.

Signal Electricians performing safeworking activities such as rerailing, routine insulation testing, inspection & testing of operational signalling infrastructure, attending derailments and incidents, etc, are to complete the Safe Working Log Sheet.

Signal Mechanical staff performing routine maintenance on signalling apparatus are to complete the Maintenance Log Sheet. Comments should include the service schedule maintenance level and any other information as applicable.

Signal Mechanical staff performing renewal or construction signalling works are to complete the Renewals & Construction Log Sheet. The specific project or activity is to be shown on the space provided. Comments should include the type of equipment worked on and the level of involvement in each activity, ie: assist in bell testing or conduct wire/null count, etc.

Signal Mechanical staff performing safeworking activities such as rerailing, routine insulation testing, inspection & testing of operational signalling infrastructure, attending derailments and incidents, etc, are to complete the Safe Working Log Sheet.

Signal Engineers certifying / authorising signalling works, conducting inspection and testing works, managing signalling maintenance, conducting investigations into signalling infrastructure re irregularities, wrong side failures and SPADs, etc, are to use the log book sheet for Signal Engineer to record details of their work performed. Comments should describe the extent of testing, their role in the task, the type of equipment worked on or other specific activity performed.

Signals Authorised Persons performing works in accordance with their authorisation levels are to complete the relevant log book sheet.

5 Implementation Requirements

Hold a signalling licence or authorisation as nominated in Signalling Engineering Standard – "Training and Certification Procedure" titled PR S 41415 "Reassessment of Signalling Infrastructure Workers".

Obtain relevant pre-formatted log sheets available as part of this document.

Complete the appropriate log sheet for the signalling work activity performed. Each sheet to apply for a specified period, ie: per quarter or per project (if less than 6 months).

Have the completed log sheet attested by the Work Group Leader or Signal Engineer controlling the activity.

Collate the log sheets in a folder suitably divided for each calendar year.

Add training records as attained, including technical briefs and on-the-job training.

Add employee's training plan – as programmed by the Division.

Add project test plans and any other useful information that may provide evidence of experience.

Controlling Signal Engineers to review the signal employee's log book as part of the interview process when assessing the level of competency. Determination of Level 1 or Level 2 will be subject to knowledge demonstrated and documented in the log book for each of the signalling elements/activities shown in the competency certificate.

Appendix A Log Book Sheets

- PR S 41416 FM01 V1.0 – Signal Electrician Signalling Safeworking
- PR S 41416 FM02 V1.0 – Signal Electrician Inspection and Testing (for Maintenance and/or following Corrective Action)
- PR S 41416 FM03 V1.0 – Signal Electrician Signalling Standards, Management Systems and Documentation
- PR S 41416 FM04 V1.0 – Signal Electrician Install / Maintain Signalling System and Equipment
- PR S 41416 FM05 V1.0 – Signal Engineer Signalling Safeworking
- PR S 41416 FM06 V1.0 – Signal Engineer Inspection and Testing (for Maintenance or New and Altered Work)
- PR S 41416 FM07 V1.0 – Signal Engineer Signalling Standards, Management Systems and Documentation
- PR S 41416 FM08 V1.0 – Signal Engineer Install / Maintain Signalling System and Equipment
- PR S 41416 FM09 V1.0 – Signal Authorised Person Inspection and Testing (for New and Altered Work)
- PR S 41416 FM10 V1.0 – Signal Authorised Person Signalling Standards, Management Systems and Documentation
- PR S 41416 FM11 V1.0 – Signal Authorised Person Install Signalling System and Equipment

LOG BOOK – SIGNAL ELECTRICIAN

Mar Jun Sep Dec _____ Year

_____
Name

circle applicable

Signalling Safeworking

Locations worked at during log book period: _____

	Conduct (✓)	Assist (✓)	Comments (e.g. Type of equipment)	Supervisor initial
Attend Derailments and Collisions – Assess situation, Make Safe				
Attend Irregularities and Wrong Side Failures – Assess situation, Make Safe				
Investigate and Repair Signalling Failures				
Disconnect Operational Signalling Infrastructure				
Inspect, Test & Certify Operational Signalling Infrastructure for the purpose of Maintenance and/or following Corrective Action				
Replace, Inspect, Test & Certify Signalling Apparatus where treated as Like for Like renewal (SPG 0711.9)				
Apply Temporary Bridging (TMG J002 & J009)				
Releasing Track or Indication Locking				
Conduct Associated Signalling Work when Rerailing in Electrified or non-Electrified Areas				
Changeover of Wires and cables (TMG J011, J012, SPG 0711.9)				

Name _____ Signature _____ / / Signature _____

Certification: Controlling Signal Engineer / Supervisor

Certification: Employee

LOG BOOK – SIGNAL ELECTRICIAN

Mar Jun Sep Dec _____ Year

_____
Name

circle applicable

Inspection and Testing (for Maintenance and/or following Corrective Action)

Locations worked at during log book period: _____

	Completed (✓)	Comments (e.g. Location / Circuit / Equipment)	Supervisor initial
Conduct Documentation Check			
Conduct Correlation Test			
Conduct Apparatus Inspection (Relay / Equipment / Wire Analysis)			
Conduct Wire and Null Count			
Conduct Bell Continuity Test			
Assist Circuit Strap and Function Test			
Conduct Circuit Function Test (incl Contact Proving Test)			
Conduct Through Circuit and Through System Tests			
Conduct Aspect Sequence Test			
Conduct Insulation and Earth Leakage Tests			
Conduct Power Supply and Polarity Tests			
Conduct Correspondence and Out of Correspondence Tests			
Conduct Signal and Level Crossing Sighting and Focusing			
Conduct Track Circuit Test			
Conduct Point Lock and Detection Test			
Conduct Gauging of Trainstop			

_____ _____ / / _____

Name Signature Signature

Certification: Controlling Signal Engineer / Supervisor

Certification: Employee

LOG BOOK – SIGNAL ELECTRICIAN

Mar Jun Sep Dec _____ Year

_____
Name

circle applicable

Inspection and Testing (for New and Altered Work)

Projects worked on during log book period: _____

	Completed (✓)	Comments (e.g. Location / Circuit / Equipment)	Supervisor initial
Conduct Documentation Check			
Conduct Correlation Test			
Assist Apparatus Inspection (Relay / Equipment / Wire Analysis)			
Assist Wire and Null Count			
Assist Bell Continuity Test			
Assist Circuit Strap and Function Test / Circuit Function Test (incl Conduct Contact Proving Test)			
Assist Through Circuit and Through System Tests			
Assist Aspect Sequence Test			
Conduct Insulation and Earth Leakage Tests			
Conduct Power Supply and Polarity Tests			
Conduct Correspondence and Out of Correspondence Tests			
Assist Signal and Level Crossing Sighting and Focusing			
Assist Track Circuit Test			
Assist Point Lock and Detection Test			
Conduct Gauging of Trainstop			

Name _____ Signature _____ / / _____ Signature

Certification: Controlling Signal Engineer / Supervisor

Certification: Employee

LOG BOOK – SIGNAL ELECTRICIAN

Mar Jun Sep Dec _____ Year

_____
Name

circle applicable

Signalling Standards, Management Systems & Documentation

Locations worked at during log book period: _____

	Completed (✓)	Comments (e.g. details of documentation used)	Supervisor Initial
Access, Navigate and Use Signalling Standards, Procedures & Engineering Instructions			
Understand and Use Work Instructions and Work Packages			
Understand and Use Technical Maintenance Plans			
Understand and Use Teams III Defect Management System and IFMS Failure Management System			
Understand and Use Signal Plans, Track Insulation Plans, Circuit Books			
Understand and Use Signalling Mechanical Drawings			

Name _____ Signature _____ / / Signature _____

Certification: Controlling Signal Engineer / Supervisor

Certification: Employee

LOG BOOK – SIGNAL ELECTRICIAN

Mar Jun Sep Dec _____ Year

circle applicable

Name _____

Install / Maintain Signalling System & Equipment (1 of 2)

Locations worked at during log book period: _____

Equipment Type	Maintain (✓)	Set to Work (✓)	Certify # (✓)	Comments (e.g. Equipment detail)	Supervisor initial
Electro-Mechanical Interlocking					
*Relay / *Route Set Interlocking					
SSI Interlocking Standard					
*Westlock / *Smartlock Interlocking					
*Westrace / *Microlok Interlocking					
Signals (*Mechanical / *Colour Light)					
Points Mechanical					
Points Electric Combined Machine					
Points Electric *Clawlock / *Spherolock					
Points EP Signal Branch					
Points EP *Clawlock / *Spherolock					
Level Crossing Protection					
Cerberus Level Crossing Monitors					
Electrical & Mechanical Releasing Devices					
Trainstops (all types)					

* Delete where not applicable

Certification for maintenance purposes only

Name _____ Signature _____ / / Signature _____

Certification: Controlling Signal Engineer / Supervisor

Certification: Employee

LOG BOOK – SIGNAL ELECTRICIAN

Mar Jun Sep Dec _____ Year

circle applicable

Name _____

Install / Maintain Signalling System & Equipment (2 of 2)

Locations worked at during log book period: _____

Equipment Type	Maintain (✓)	Set to Work (✓)	Certify # (✓)	Comments (e.g. Equipment detail)	Supervisor initial
Track Circuit HVI (JS)					
Track Circuit Audio Frequency					
Track Circuit FS2600					
Track Circuit *AC / *DC					
Track Circuit *MT / *OL					
Track Circuit (other)					
*Axle Counter / *Treadle					
1500v DC Traction Bonding					
Hard Wired Non-Vital System					
Telemetry System					
Control / Indication System *ATRICS / *SigView / *WestCad					
Vital Shelf Relay					
ATP Trackside Equipment					
Locate Signalling Services / *Cadweld					

* Delete where not applicable

Certification for maintenance purposes only

Name _____ Signature _____ / / Signature _____

Certification: Controlling Signal Engineer / Supervisor

Certification: Employee

LOG BOOK – SIGNAL ENGINEER

Mar Jun Sep Dec _____ Year

_____
Name

circle applicable

Signalling Safeworking

Locations worked at during log book period: _____

	Completed (✓)	Comments (e.g. Work performed)	Supervisor initial
Investigate Derailments & Collisions			
Investigate Irregularities & Wrong Side Failures			
Disconnect Operational Signalling Infrastructure			
Commission New & Altered Signalling Infrastructure			
Test & Certify New & Altered Signalling Infrastructure			
Inspect & Test Operational Signalling Infrastructure for the Purpose of Maintenance			
Releasing Track or Indication Locking			
Authorise Temporary Bridging - *Non Operational / Operational Signalling			
Authorise Like for Like Renewals (SPG 0711.9)			
Authorise Trainstop Suppression			
Test & Certify Mechanical Interlocking (up to 8 levers) and Relay Interlocking			
Changeover of Wires and Cables (TMG J011, J012, SPG 0711.9)			

* Delete where not applicable

Name _____ Signature _____ / / _____ Signature

Certification: Controlling Signal Engineer / Supervisor

Certification: Employee

LOG BOOK – SIGNAL ENGINEER

Mar Jun Sep Dec _____ Year

circle applicable

Name _____

Inspection and Testing (for Maintenance or New and Altered Work)

Projects worked on during log book period: _____

	Completed (✓)	Comments (e.g. Location / Circuit / Equipment) and Work Performed (Maintenance or New / Altered Work)	Supervisor initial
Update, Check, and Certify Documentation			
Conduct Correlation Test			
Conduct Apparatus Inspection (Relay/Equipment/Wire Analysis)			
Conduct Wire and Null Count / Bell Continuity Test			
Conduct Circuit Function Test/Circuit Strap and Function Test			
Conduct Through Circuit and Through System Tests			
Conduct Aspect Sequence Test			
Conduct Insulation and Earth Leakage Tests			
Conduct Power Supply and Polarity Tests			
Adjust Points/Conduct Correspondence and Out of Correspondence Tests			
Conduct Signal and Level Crossing Sighting and Focusing			
Adjust and Correspond Track Circuit			
Gauge and Correspond Trainstop			

Name _____ Signature _____ / / Signature _____

Certification: Controlling Signal Engineer / Supervisor

Certification: Employee

LOG BOOK – SIGNAL ENGINEER

Mar Jun Sep Dec _____ Year

circle applicable

Name _____

Signalling Standards, Management Systems & Documentation

Locations worked at during log book period: _____

	Completed (✓)	Comments (e.g. details of documentation used)	Supervisor Initial
*Write / *Review Signalling Standards, Procedures & Engineering Instructions			
Review and Risk Assess Signalling Standards, Procedures & Engineering Instructions			
Participate in Signal Condition Integrity Audits			
*Conduct / *Assist Signalling Technical Investigations			
Audit *Maintenance / *Construction Documentation			
*Draft / *Review / *Risk Assess Signalling Waivers			
*Draft / *Review / *Endorse Commissioning Work Package			

* Delete where not applicable

Name _____ Signature _____ / / Signature _____

Certification: Controlling Signal Engineer / Supervisor

Certification: Employee

LOG BOOK – SIGNAL ENGINEER

Transport Sydney Trains

NSW GOVERNMENT

Mar Jun Sep Dec _____ Year

_____

Name

circle applicable

Install / Maintain Signalling System & Equipment (1 of 2)

Locations worked at during log book period: _____

Equipment Type	Maintain (✓)	Set to Work (✓)	Certify (✓)	Comments (eg Equipment detail)	Supervisor initial
Electro-Mechanical Interlocking					
*Relay / *Route Set Interlocking					
SSI Interlocking Standard					
*Westlock / *Smartlock Interlocking					
*Westrace / *Microlok Interlocking					
Signals (*Mechanical / *Colour Light)					
Points Mechanical					
Points Electric Combined Machine					
Points Electric *Clawlock / *Spherolock					
Points EP Signal Branch					
Points EP *Clawlock / *Spherolock					
Level Crossing Protection					
Cerberus Level Crossing Monitors					
Electrical & Mechanical Releasing Devices					
Trainstops (all types)					

* Delete where not applicable

Name

Signature / /

Certification: Controlling Signal Engineer / Supervisor

Signature

Certification: Employee

LOG BOOK – SIGNAL ENGINEER

Mar Jun Sep Dec _____ Year

circle applicable

Name _____

Install / Maintain Signalling System & Equipment (2 of 2)

Locations worked at during log book period: _____

Equipment Type	Maintain (✓)	Set to Work (✓)	Certify (✓)	Comments (e.g. Equipment detail)	Supervisor initial
Track Circuit HVI (JS)			#		
Track Circuit Audio Frequency			#		
Track Circuit FS2600			#		
Track Circuit *AC / *DC			#		
Track Circuit *MT / *OL			#		
Track Circuit (other)			#		
*Axle Counter / *Treadle					
1500v DC Traction Bonding					
Hard Wired Non-Vital System					
Telemetry System					
Control / Indication System *ATRICS / *SigView / *WestCad					
Vital Shelf Relay					
ATP Trackside Equipment					
Locate Signalling Services / *Cadweld					

* Delete where not applicable

Track circuit initial certification is recorded on a separate log sheet. This log sheet is to be used for Maintenance certification only

Name _____ Signature _____ / / Signature _____

Certification: Controlling Signal Engineer / Supervisor

Certification: Employee

LOG BOOK – SIGNAL AUTHORISED PERSON

Transport Sydney Trains

NSW GOVERNMENT

Mar Jun Sep Dec ____ **Year**

_____

Name

circle applicable

Inspection and Testing for New and Altered Work (1 of 2)

Projects worked at during log book period: _____

Activity	#Assist (✓)	#Certify (✓)	Comments (e.g. Location / Circuit / Equipment)	Supervisor initial
Conduct Documentation Check				
Conduct Correlation Checking				
Conduct Apparatus Inspection				
Conduct Wire Count				
Conduct Null Count				
Conduct Insulation Test				
Conduct Bell Continuity Test				
Conduct Hand Trace				
Conduct Apparatus Function Test				
Conduct Contact Proving Test				
Conduct Circuit Function Test				
Conduct Circuit Strap and Function Test				
Conduct Function Test to Control Tables				

NOTE: Signals Authorised Persons must refer to Specification SPG 0711.1 to determine the Minimum Authorisation requirements for the activity to be performed.

	/ /	
Name	Signature	Signature
Certification: Controlling Signal Engineer / Supervisor		**Certification:** Employee

LOG BOOK – SIGNAL AUTHORISED PERSON

Mar Jun Sep Dec ____ Year

circle applicable

Name _____

Inspection and Testing for New and Altered Work (2 of 2)

Projects worked at during log book period: _____

Activity	#Assist (✓)	#Certify (✓)	Comments (e.g. Location / Circuit / Equipment)	Supervisor initial
Conduct Through Circuit Test				
Conduct Through System Test				
Conduct Track Circuit Shunt / Drop / Polarity Tests				
Conduct Power Supply Polarity Test				
Conduct Power Supply Isolation Test				
Conduct Aspect Sequence Test				
Conduct Mechanical Interlocking Test				
Conduct Points Correspondence Test				
Conduct Points Out of Correspondence Test				
Conduct Facing Point Lock Test				
Conduct Closed Switch Detection Test				
Conduct Open Switch Detection and Switch Opening Test				

NOTE: Signals Authorised Persons must refer to Specification SPG 0711.1 to determine the Minimum Authorisation requirements for the activity to be performed

Name _____ Signature _____ / / Signature _____

Certification: Controlling Signal Engineer / Supervisor

Certification: Employee

LOG BOOK – SIGNAL AUTHORISED PERSON

Transport Sydney Trains

NSW GOVERNMENT

Mar Jun Sep Dec ____ **Year**

_____

Name

circle applicable

Signalling Standards, Management Systems & Documentation

Locations worked at during log book period: _____

	Completed (✓)	Comments (e.g. details of documentation used)	Supervisor Initial
Access, Navigate and Use Signalling Standards, Procedures & Engineering Instructions			
Understand and Use Work Instructions and Work Packages			
Understand and Use Signal Plans and Track Insulation Plans,			
Understand and Use Circuit Books			
Understand and Use Signalling Mechanical Drawings			

_____ _____ / / _____

Name Signature Signature

Certification: Controlling Signal Engineer / Supervisor

Certification: Employee

LOG BOOK – SIGNAL AUTHORISED PERSON

Mar Jun Sep Dec ____ Year

circle applicable

Name _____

Install Signalling System & Equipment (1 of 2)

Locations worked at during log book period: _____

Equipment Type	#Install (✓)	Comments (e.g. Equipment detail)	Supervisor initial
Electro-Mechanical Interlocking			
*Relay / *Route Set Interlocking			
SSI Interlocking Standard			
*Westlock / *Smartlock Interlocking			
*Westrace / *Microlok Interlocking			
Signals (*Mechanical / *Colour Light)			
Points Mechanical			
Points Electric Combined Machine			
Points Electric *Clawlock / *Spherolock			
Points EP Signal Branch			
Points EP *Clawlock / *Spherolock			
Level Crossing Protection			
Cerberus Level Crossing Monitors			
Electrical & Mechanical Releasing Devices			
Trainstops (all types)			

* Delete where not applicable

NOTE: Signals Authorised Persons must refer to Specification SPG 0711.1 to determine the Minimum Authorisation requirements for the activity to be performed

Name _____ Signature _____ / / Signature _____

Certification: Controlling Signal Engineer / Supervisor

Certification: Employee

LOG BOOK – SIGNAL AUTHORISED PERSON

Mar Jun Sep Dec ____ Year

circle applicable

Name _____

Install Signalling System & Equipment (2 of 2)

Locations worked at during log book period: _____

Equipment Type	#Install (✓)	Comments (e.g. Equipment detail)	Supervisor initial
Track Circuit HVI (JS)			
Track Circuit Audio Frequency			
Track Circuit FS2600			
Track Circuit *AC / *DC			
Track Circuit *MT / *OL			
Track Circuit (other)			
*Axle Counter / *Treadle			
1500v DC Traction Bonding			
Hard Wired Non-Vital System			
Telemetry System			
Control / Indication System *ATRICS / *SigView / *WestCad			
Vital Shelf Relay			
ATP Trackside Equipment			
Locate Signalling Services / *Cadweld			

* Delete where not applicable

NOTE: Signals Authorised Persons must refer to Specification SPG 0711.1 to determine the Minimum Authorisation requirements for the activity to be performed

Name _____ Signature _____ / / Signature _____

Certification: Controlling Signal Engineer / Supervisor

Certification: Employee